

Status Report on EWA Gaming

Presented at the Quinn/Spear meeting
April 28, 1999

GAMES COMPLETED

- Game 0 - Pilot Effort
- Game 1 - Middle Stage 1 Assets -- Type 1
- Game 2 - Late Stage 1 Assets -- Type 1
- Game 3 - Late Stage 1 Assets -- Type 2

Type 1 - Gallon per Gallon

Type 2 - Credit Approach

Baseline of Accord + upstream and Delta AFRP

GAMES PLANNED

- Game 4 - Early Stage 1 with InDelta AFRP
- Game 5 - Early Stage 1 w/o InDelta AFRP

New Management Assets - End of Stage 1

- Expanded Banks - 10,300
- JPOD
- E/I, In-Delta AFRP Variances
- Ground Water (600 TAF in ; 60 TAF/Mo. in-out)
- Shasta Enlargement (50 TAF)
- Webb Tract Storage (120 TAF, 2 cfs. in-out)
- Bacon+ Storage/Connected (200 TAF; 4 cfs. in-out)
- ET Reductions on Delta Islands (60TAF / year)
- Water Purchase (NOD, SOD, spot market) -- \$30m/yr.
- San Luis Storage Borrowing
- Unused System Capacities
- Demand Shifting (100 TAF/yr)

Preliminary Fish Results

- Game 1 evaluated partly; games 2&3 not evaluated.
- Benefits and impacts of EWA are difficult to quantify.
- EWA provides flexibility.
 - Reduced exports and increased flows are good
 - Increased exports are problematic at times.
- VAMP export reduction decreases entrainment in April/May in baseline and EWA game.
- Easier to protect fish in dry years than wet years.
- Focused mostly on listed species , others also affected.

Usage of EWA Assets

- Dollar account could have been used more aggressively in games 1 and 2.
- Delta islands useful in game 1; unsure about benefits/Impacts of greater island storage in games 2 and 3.
- Assets must increase as allowable baseline exports increase.
- Ground water less useful due to recharge/extraction capacities.
- Upstream benefits are not captured by model.

Assessments Needed

- Analysis of 1) Entrainment and 2) Survival compared w/historical & baseline values not completed
- Comparison with prescriptive standard alternative
- Assess changes in hydrodynamics for games.
- Need sensitivity analyses of competing biological assumptions.

Water Quality

- **Preliminary results March 99**
 - Features /actions that could be of concern
 - More specific analysis needed
- **Usage of WQ assets in latest game**
 - What we did, what we learned and could improve
 - Descriptions of tradeoffs
- **Broader Stage 1 assessment of WQ needed**
 - How the EWA gaming relates to overall Stage 1
 - Integration with water quality program

Estimating Water Supply

- DWR base run for each game
- Subtract Accord + Upstream AFRP
- Add gamed Water Supply benefits
- Subtract environmental credits (Game 3)
- Compared to less than equal to 400 TAF/yr
- Based on limited years data

Water Supply

Relative to Accord + Upstream AFRP
+ water user needs

- Game 1: -330 to -380 TAF
- Game 2: -250 to -370 TAF
- Game 3: -265 to -315 TAF